Hawaii Asthma Plan

A Strategic Plan for Addressing Asthma in Hawaii 2006 - 2010

Hawaii Asthma Initiative

Foreword
Hawaii Asthma Initiative

The Hawaii Asthma Initiative's mission is to reduce the burden of asthma in Hawaii.

Asthma is a complex disease that requires long-term and multifaceted solutions. These include educating, treating, and providing ongoing medical care and monitoring people with the disease, changing behaviors that may lead to asthma or make it worse, and eliminating or avoiding triggers. The state's public health response to asthma has several key components that include surveillance, education, coalition building, advocacy, interventions, and evaluation. To affect change at a statewide level requires a coordinated and multifaceted response from many organizations. Thus, the Hawaii Asthma Initiative was established.

The Hawaii Asthma Initiative is a broad-based, multi-organizational, statewide community collaborative whose goal is to bring the public and private sectors together in an effort to increase the quality and years of healthy life for people impacted by asthma, and to eliminate health disparities in Hawaii. This initiative is supported by the Hawaii State Department of Health's Asthma Control Program and the Centers for Disease Control and Prevention.

The Hawaii Asthma Initiative's mission is to reduce the burden of asthma in Hawaii.

To fulfill its mission, the Hawaii Asthma Initiative stakeholders worked towards increasing community readiness to mobilize and improve Hawaii's existing asthma system of care. The Hawaii Asthma Initiative utilized three main strategies to accomplish this: (1) increase Hawaii's understanding of the burden of asthma, paying particular attention to the identification of health disparities; (2) engage community partners to identify gaps in the delivery of asthma-related programs and services; and (3) develop strategies to meet the needs of all island communities and sub-communities. This culminated in the development of the Hawaii Asthma Plan, which provides a clear and unified roadmap for communities to collaborate and mobilize to reduce the burden of asthma in Hawaii.

Hawaii Asthma Initiative

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- School Health Services
- Windward Oahu District Office

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  - Bilingual Health Services
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  - Hawaii State Diabetes Prevention and Control Program
  - Tobacco Prevention and Education Program

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- Disease Investigation Branch

Hawaii Department of Health – Environmental Health Services Division
- Food and Drug Branch
- Noise, Radiation and Indoor Air Quality Branch

Hawaii Department of Health – Family Health Services Division
- Maternal and Child Health Branch

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Waianae Coast Comprehensive Health Center

Waikiki Health Center

Windward Oahu Asthma Coalition

A Message from the Director of Health

Aloha Kakou,

I am pleased to introduce the Hawaii Asthma Plan: A Strategic Plan for Addressing Asthma in Hawaii 2006 – 2010. This document is a result of a three year collaborative effort and represents the unified vision of individuals and organizations across the entire State of Hawaii.

The Hawaii Asthma Plan serves as a roadmap to improve the quality of care for people with asthma, while focusing on health disparities. This plan is based on the current needs of Hawaii's communities and is supported by an explicit set of guiding principles. It identifies a congruent set of goals, objectives, and strategies set forth by the Hawaii Asthma Initiative.

The Hawaii Asthma Plan is a call to action to improve Hawaii's asthma surveillance, empower individuals with asthma, develop a more effective health system, and to improve our environment. While the challenge of asthma is evident, it is through the coordination and mobilization of dedicated partners that we will achieve success in the fight against asthma.

In Hawaii, over 90,000 people have asthma. Asthma is a serious, common, and costly disease, but though a unified effort, we can create a healthier Hawaii. On behalf of the Hawaii State Department of Health, I would like to thank you for your time and effort and I encourage everyone to work together to improve the quality of healthy life for individuals, families, and communities affected by asthma.

Kuikahi Kakou i ka puuwai,
Let us work together from the heart,

Chiyome Leinaala Fukino, M.D.
Director
Hawaii State Department of Health

Asthma in Hawaii

- Hawaii's Current Asthma System of Care
- An Assessment of Asthma Needs in Hawaii
- Hawaii's Current Asthma Burden
- Highlights of Hawaii's Current Asthma Burden

Hawaii's Current Asthma System of Care

Over the past three years, the Hawaii State Department of Health (DOH), Hawaii State Asthma Control Program (HSACP) has guided asthma stakeholders across the State to define Hawaii's system to address asthma, while being mindful of the state's unique cultural and ethnic diversity, language, and geography, and its impact on this system. The following describes the framework in which Hawaii currently operates:

- **State Asthma Health System** (SAHS) is a public health theoretical concept that describes all individuals and organizations that are directly or indirectly involved in asthma care across the entire state.

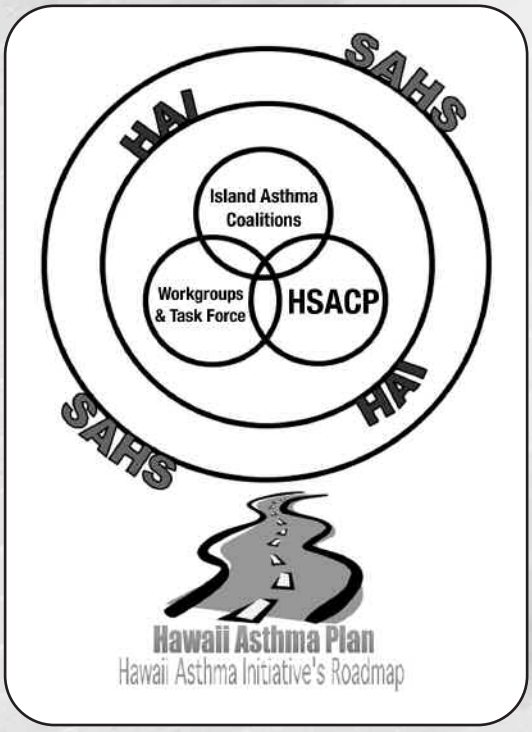
- **Hawaii Asthma Initiative** (HAI) is a network of individuals and organizations whose goal is to work together to increase quality and years of healthy life for those affected by asthma and to eliminate health disparities. HAI is part of the SAHS.

- **Hawaii State Department of Health** (DOH), **Hawaii State Asthma Control Program's** (HSACP) role is to sustain the HAI through the convening of stakeholders and partners to accomplish the goals set forth in the Hawaii Asthma Plan (HAP), providing an understanding of the burden of asthma, offering technical assistance and appropriate training to assure a coordinated effort across the state.

- **Island Asthma Coalitions** are the island-specific entities that will implement activities of the HAP.

- HAI **Workgroups/Task Force** provides technical assistance and support to the Island Asthma Coalitions.

- **Hawaii Asthma Plan** (HAP) serves as a roadmap for the HAI and the Island Asthma Coalitions. It is a call to action to reduce the burden of asthma in Hawaii.



An Assessment of Asthma Needs in Hawaii

Although Hawaii has a well established and functioning healthcare delivery system, the capacity of this "system" to deliver comprehensive and appropriate asthma care has not been assessed in recent years. To address this issue, the Hawaii State Asthma Control Program (HSACP) embarked on a project to assess the capacity of Hawaii's current asthma healthcare delivery system and identify specific areas of need. In order to complete this project, the HSACP, through the guidance of the Hawaii Asthma Initiative (HAI) Data and Surveillance Workgroup, developed, disseminated, collected, and analyzed two versions of an asthma needs assessment questionnaire. The questionnaires were designed to capture the perspectives of asthma stake holders regarding a simple and straightforward question: "In your opinion, what asthma-related issues need to be better addressed in Hawaii?"

The findings of this "paper and pencil" asthma needs assessment suggest that asthma stakeholders in Hawaii regard asthma education [(1) patient education, (2) caregiver education, (3) public awareness, (4) community education, (5) professional education, and (6) dissemination of education] as the most important asthma-related issue that needs more attention. The following cross-cutting themes emerged as being important regarding asthma education in general: signs/symptoms/definition of asthma, appropriate care-seeking, asthma triggers and risk factors, proper medication use and compliance, proper method of medication delivery, appropriate use of peak flow meters, asthma action plans, and treatment guidelines.[1]

Asthma in Hawaii

Hawaii's Current Asthma Burden

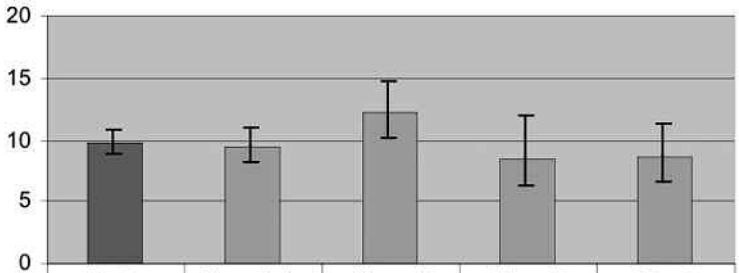
Asthma is a major public health problem in the United States, affecting approximately 15 million people, nearly 5 million who are under the age of 18. People with asthma experience well over 100 million days of restricted activity annually and the total annual costs of the disease are estimated at $11.3 billion. This chronic disease of the airways is characterized by recurrent and distressing episodes of wheezing, breathlessness, chest tightness, and nighttime or early morning coughing.

Asthma Prevalence:

In Hawaii, asthma is one of the most common chronic diseases among children. According to the 2002 Hawaii Behavioral Risk Factor Surveillance System (BRFSS), approximately 9.7%, or 28,600 of Hawaii's children have been diagnosed with asthma by a health professional and still have asthma (current asthma prevalence). Furthermore, approximately 6.9%, or 64,000 of Hawaii's adults have also been diagnosed with asthma by a health professional and still have asthma (current asthma prevalence).[2]

Figure 1. Percent of children residing in Hawaii and the four counties that currently have asthma, BRFSS, 2002

Finding: Children in Hawaii County have a higher prevalence rate of current asthma when compared with the other counties and the state average; however, this finding is not statistically significant.

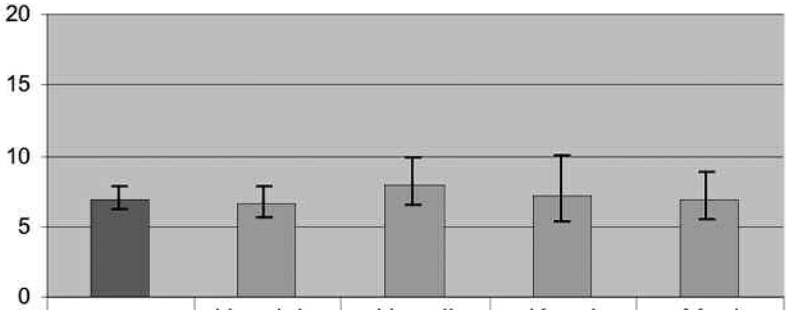


	State	Honolulu	Hawaii	Kauai	Maui
% Current Childhood Asthma	9.7	9.5	12.2	8.5	8.6

Finding: Adults in Hawaii County have a higher prevalence rate of current asthma when compared with the other counties and the state average; however, this finding is not statistically significant.

Overall, Hawaii's adult current prevalence rate (6.9%) is lower than the national average (7.5%) for 2002.

Figure 2. Percent of adults residing in Hawaii and it counties that currently have asthma, BRFSS, 2002



	State	Honolulu County	Hawaii County	Kauai County	Maui County
% Current Adult Asthma	6.9	6.6	7.9	7.2	6.9

Health Disparities:

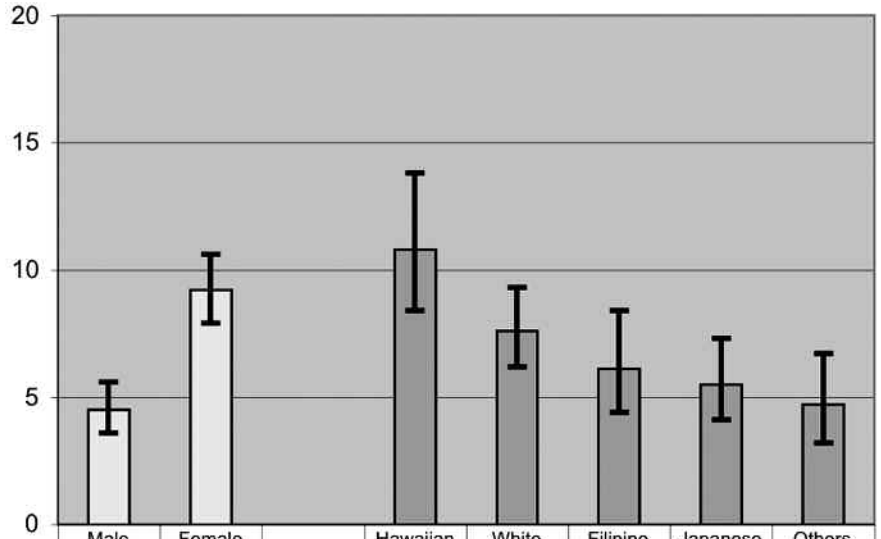
Recent results of chronic disease surveillance demonstrate that asthma is not equally distributed among Hawaii's population. Despite ongoing and targeted public health efforts, asthma-related health disparities continue to persist. These disparities are believed to be the consequences of variables such as genetic predisposition, biological factors, age, lifestyle choices, environmental factors, socio-economic position, and the interaction among and between these variables. According to the 2002 Hawaii BRFSS, Native Hawaiian adults have the highest current asthma prevalence rate (have been diagnosed with asthma by a health professional and still have asthma) at 10.8%, followed by Caucasians at 7.6%, Filipinos at 6.1%, Japanese at 5.5%, and "Other" ethnic groups at 4.7%. Asthma-related disparities also exist by gender. For example, the 2002 Hawaii BRFSS indicates that adult females are experiencing a higher current asthma prevalence rate (have been diagnosed with asthma by a health professional and still have asthma) when compared to adult males (9.2% versus 4.5%).[2]

Finding: 9.2% of adult females have a higher prevalence rate (likely significant difference) of current asthma when compared with adult males (4.5%).

When compared with the national average, both adult females and males in Hawaii have lower current asthma prevalence rates (U.S. adult females – 9.4%, U.S. adult males – 5.5%).

Adult Native Hawaiians have a higher prevalence rate (likely significant difference) of current asthma when compared with the Japanese and "Other" ethnic group.

Figure 3. Percent of adults residing in Hawaii that currently have asthma by gender and ethnicity, BRFSS, 2002



	Male	Female	Hawaiian	White	Filipino	Japanese	Others
% Current Adult Asthma	4.5	9.2	10.8	7.6	6.1	5.5	4.7

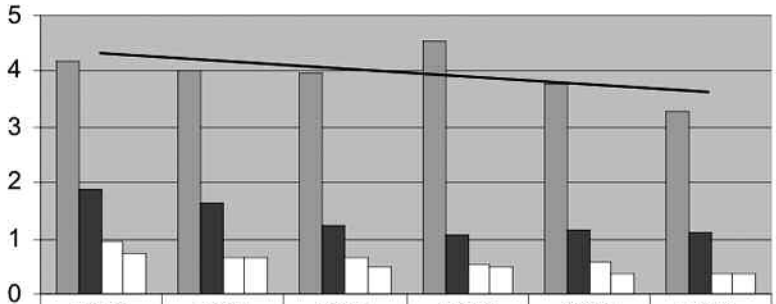
Hospitalizations:

The majority of hospitalizations related to asthma occur between the ages of 0-19, most notably among children under the age of five. Recent analysis of Hawaii's childhood asthma hospitalization rate shows a downward trend from 1996 to 2001; however, the Hawaii 2001 asthma hospitalization rate for children under five (3.29/1000) remains higher than the Healthy People 2010 goal of 2.5/1000.[2]

Finding: The majority of hospitalizations related to asthma between the ages of 0-19 are occurring in children under the age of five. The Hawaii 2001 asthma hospitalization rate for children under five (3.29/1000) is higher than the Healthy People 2010 goal of 2.5/1000.

There is a significant overall downward trend in childhood asthma hospitalization rates (1996 to 2001), except within the under five age-group.

Figure 4. Hawaii childhood asthma hospitalizations* per 1000 population, ages 0-19, 1996 – 2001



	1996	1997	1998	1999	2000	2001
Under 5 years of age	4.2	4.02	3.97	4.55	3.76	3.29
5 to 9 years of age	1.87	1.65	1.25	1.07	1.14	1.09
10 to 14 years of age	0.93	0.67	0.65	0.54	0.57	0.38
15 to 19 years of age	0.73	0.66	0.51	0.51	0.35	0.37

* Asthma defined by primary ICD9 codes 493.xx. Hawaii residents only. Excludes newborns, pregnancy-related admissions and patients admitted through a transfer from another facility.
Data Source: Hawaii Health Information Corporation.
Rates calculated by the Hawaii State Asthma Control Program.

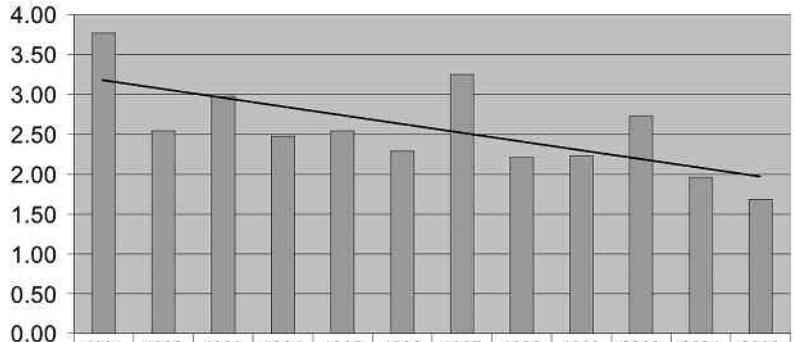
Asthma in Hawaii

Mortality:

Although the asthma mortality rate has declined from 1991 to 2002 (3.77 per 100, 000 population to 1.69 per 100,000 population), 21 deaths still occurred in 2002 with asthma identified as an underlying cause.[2]

Figure 5. Hawaii asthma mortality* per 100,000 population, 1991 to 2002

Finding: There is a significant overall downward trend in asthma mortality rates between the years 1991 – 2002. However, Hawaii's asthma mortality rate is higher than the U.S. average (2.72/100,000 versus 1.59/100,000) for year 2000.



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Asthma Deaths per 100,000 Population	3.77	2.55	2.97	2.48	2.54	2.30	3.25	2.21	2.23	2.72	1.96	1.69

* The Estimated Comparability Ratio was used to allow comparisons to be made across all years.
Asthma mortality defined as asthma as an underlying cause of death.
Data Source: Office of Health Status Monitoring, Hawaii State Department of Health.
Rates calculated by the Hawaii State Asthma Control Program.

Highlights of Hawaii's Current Asthma Burden

Data from the 2002 Hawaii Behavioral Risk Factor Surveillance System (BRFSS) survey suggest that in Hawaii, 9.7% or 28,600 children, and 6.9% or 64,000 adults have been diagnosed with asthma by a health professional and still have asthma.

Native Hawaiians have a higher current adult asthma prevalence rate (have been diagnosed with asthma by a health professional and still have asthma) when compared with Japanese and "Other" ethnic groups.

Females have a higher current adult asthma prevalence rate (have been diagnosed with asthma by a health professional and still have asthma) when compared with adult males.

Obesity is associated with current asthma in adults.

Adults with current asthma are more likely to have a history of smoking (former, current).

Depressive and anxiety symptoms are higher among adults with current asthma when compared to adults without current asthma.

Adults with current asthma are more likely to report not getting enough sleep when compared to adults without current asthma.

Flu shot and pneumococcal pneumonia vaccine rates are higher among adults with current asthma when compared to adults without current asthma; however, these vaccine rates are lower than the Healthy People 2010 goals for high-risk adults.

Hawaii's asthma mortality rates are (asthma as an underlying cause) decreasing (1991-2002), but are still higher than the national average (year 2000).

Statewide pediatric hospitalization rates are decreasing, except in the under five age-group. Within the under five age-group, asthma hospitalization rates are higher than the Healthy People 2010 goal.


National Asthma Awareness Month
Music is Good Medicine
WORLD ASTHMA DAY
Let Every Person Breathe
Proclamation
AMERICAN LUNG ASSOCIATION of Hawaii
Ke Kula Kaiapuni
Hawai'i O Kapa'a
Childhood Rural Asthma Project
The Key to Unlocking the Door to Promising Health Practices

Hawaii Asthma Plan Overview

- Purpose Statement
- Process for the Development of the Hawaii Asthma Plan
- Hawaii Asthma Initiative Guiding Principles
- Mobilization of Hawaii Asthma Initiative Stakeholders

Hawaii Asthma Plan - Overview

Purpose Statement

The Hawaii Asthma Plan (HAP) has been created to provide a roadmap for the mobilization of the Hawaii Asthma Initiative (HAI) and the recently established Island Asthma Coalitions (Oahu, Maui, Molokai/Lanai, Kauai, Island of Hawaii) to work together to reduce the burden of asthma for the next five years (2006 – 2010). The HAP is based on the current needs of the community and is supported by the guiding principles of the HAI. The HAP identifies a congruent set of strategies that are aimed at accomplishing the goals and objectives set forth by the HAI.

The HAP provides a framework to: (1) establish leadership by allowing organizations to identify their areas of strength, their roles and responsibilities and their contribution to the asthma health system; (2) reach consensus on a congruent set of goals across the State through the coalition meeting process; and (3) minimize redundancies through the sharing of information and identification of lead agencies.

Interventions identified in the HAP will eventually become institutionalized and sustained beyond Centers for Disease Control and Prevention (CDC) funding through the continuous convening of stakeholders and partners on a regular and consistent basis (e.g. Island Asthma Coalition meetings, Workgroup/Task Force meetings, trainings, presentations, and consortiums).

Continued collaboration fostered through the HAP will provide the strategic direction, structure, and process necessary to identify solutions to common barriers while building a support system necessary to achieve common goals.

The HAP document will guide Hawaii's asthma stakeholders in a unified quest to decrease the burden of asthma in their communities, and ultimately throughout the entire State of Hawaii.

Process for the Development of the Hawaii Asthma Plan

The Hawaii State Asthma Control Program (HSACP) and its partners initially began work on the Hawaii Asthma Plan (HAP) in 2002. Through a comprehensive series of activities, the HAP was created. Five major components completed over the course of three years have contributed to the creation of the HAP.

Assessment of Asthma Needs in Hawaii

In September 2003, the HSACP, disseminated and collected an asthma needs questionnaire aimed at answering this question: "In your opinion, what asthma-related issues need to be better addressed in Hawaii?" This activity was designed to gather the opinions of asthma stakeholders in an "informal" manner, as opposed to following a research protocol. Findings of this assessment identified education as the top area of need.

State of Asthma – Hawaii 2004 Burden Report

In October of 2004, the HSACP published the first asthma burden report for Hawaii. This document presents the most recent information available on the current and lifetime prevalence of asthma, hospitalizations, health status, health / lifestyle behavior, and mortality. The asthma burden report serves as the principle vehicle for communicating data about ongoing surveillance activities to the Hawaii Asthma Initiative.

Statewide Strategic Planning Meetings

During the summer of 2004, stakeholders across the state participated in a series of strategic planning meetings for asthma. The purpose of holding these meetings on each island was to ensure stakeholder participation and buy-in as well as to begin island-specific strategic planning for asthma to identify and detail strategies that target Hawaii's asthma-related needs.

Hawaii Asthma Resource Directory

In January of 2005, the HSACP began work on creating an asthma resource directory for Hawaii. This directory began as an activity at the statewide strategic planning meetings. The information gathered was used to formulate the "Survey of Hawaii's Asthma-related Programs and Services." The information from this survey was compiled and collated into a registry of asthma-related programs and services for Hawaii to facilitate networking among agencies.

Island Asthma Coalition Meetings

During the months of March through April 2005, the HSACP conducted a series of asthma coalition meetings on the islands of Oahu, Maui, Molokai, Lanai, Kauai, and the Island of Hawaii. The purpose of these meetings were: (1) to convene stakeholders on each island to define community readiness to expand, enhance, and/or create new activities that align to Hawaii's HAP; (2) to share, update, and network with other stakeholders.

Hawaii Asthma Plan - Overview

Hawaii Asthma Plan Document

The background information used to construct the HAP document includes the following: (1) findings of the asthma needs assessment; (2) statewide inventory of preventative services and providers; and (3) data collected through Hawaii's current asthma surveillance "system".

The HAP consists of three main sections: (1) a description of Hawaii's current asthma burden, (2) Hawaii's prioritized areas of need relating to asthma, and (3) strategies aimed specifically at ameliorating those asthma-related needs.

Priority Areas

The HAP provides the framework for asthma stakeholders to align, collaborate and mobilize toward common goals aimed at improving high priority areas of need. The priority areas are:

1. Patient education.
2. Professional education.
3. Interventions that target their efforts on populations at greater risk for asthma (Native Hawaiians, male children, female adults).
4. Interventions that target their efforts on asthma-related risk factors and triggers (second-hand smoke exposure, obesity, indoor air quality).

Hawaii Asthma Initiative Guiding Principles

The Hawaii Asthma Initiative (HAI) is guided by the following principles:

- **Community based:** The HAI understands that each community is unique. Each community will have an active and equal role in the planning, implementation and evaluation of their activities.

- **Evidence based:** The HAI will be driven by the best available evidence and will serve as a road map to reduce the burden of asthma in Hawaii.

- **Turning data into action:** Surveillance data will be used to identify health disparities related to asthma among Hawaii residents and strategies will be identified to reduce those disparities.

- **Health disparities:** Current asthma surveillance findings are providing evidence that many of Hawaii's populations are experiencing a disproportionate burden of asthma. The many dimensions of health disparities include race/ethnicity, socioeconomic factors, and geography.[3] Health disparities will continue to be a top priority for the HAI.

- **Cultural competence/appropriateness:** "Cultural and linguistic competence is a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations. 'Culture' refers to integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups. 'Competence' implies having the capacity to function effectively as an individual and an organization within the context of the cultural beliefs, behaviors, and needs presented by consumers and their communities".[4] Health professionals and health systems in Hawaii need to place cultural issues high on their list of priorities. Cultural competence/appropriateness is a key factor in reducing health disparities, and is crucial for the success of this plan.

- **Patient centered:** Clinical interventions should strive to be patient centered. Patient centered means treating patients as partners, involving them in planning their health care and encouraging them to take responsibility for their own health.[5]

- **Collaboration:** Coordination and collaboration are essential to achieving the goals of this plan and assuring implementation. By working together, more can be done to reduce the asthma burden in Hawaii than could be accomplished if we continue our individual efforts.

Hawaii Asthma Plan - Overview

- **Cutting edge:** Application of state-of-the-art knowledge, technology, and practices will be the foundation for all strategies and actions the HAI promotes.

- **Equal access:** The intent of the HAI is to develop an asthma health system that strives to provide equal access to comprehensive asthma services for all people of Hawaii.

- **Alignment with other State plans:** The Hawaii Asthma Plan (HAP) integrates appropriate recommendations and strategies found in other state plans that address asthma-related issues.

- **Congruency with national objectives:** The goals set forth in the HAP are aligned with Hawaii's needs, and are congruent with national initiatives [Healthy People 2010 National Goals for Asthma (Appendix 1), The Essential Public Health Services (Appendix 2), National Asthma Education and Prevention Program].

- **Reduce redundancies:** Many worthwhile and effective asthma initiatives are currently underway throughout Hawaii and the nation. When appropriate, the HAI will strive to enhance and expand these existing efforts, for the benefit of Hawaii's residents impacted by asthma.

- **Evaluation:** All strategies carried out in the HAP will be evaluated. Effective program evaluation is a systematic way to improve and account for public health actions that involves procedures that are useful, feasible, ethical, and accurate. Understanding the logic, reasoning, and values of evaluation leads to lasting impacts, such as basing decisions on systematic judgments instead of unfounded assumptions.[6]

- **Sustainability:** Strategies to ensure the sustainability of interventions implemented in the HAP need to be included in all planning phases.

Mobilization of Hawaii Asthma Initiative Stakeholders

As previously stated, the Hawaii Asthma Initiative (HAI) recognized the importance of increasing community readiness in order to mobilize and improve Hawaii's existing asthma system of care. Three strategies were implemented to increase community readiness to mobilize: (1) increase Hawaii's understanding of the burden of asthma, paying particular attention to the identification of populations experiencing health disparities; (2) engage community partners to identify gaps in the delivery of asthma-related programs and services; and (3) develop strategies to meet the needs of all island communities and sub-communities.

The HAI also recognized the need to organize itself into smaller groups in order to effectively mobilize and carry out the strategies laid out in the Hawaii Asthma Plan (HAP). Knowing this, the HAI established Island Asthma Coalitions for Oahu, Maui, Molokai, Lanai, Kauai, and the Island of Hawaii. In addition to the Island Asthma Coalitions, workgroups in four content areas are currently being established (Data and Surveillance Workgroup, Individual / Family / Community Workgroup, Health Professional Workgroup, Environmental Workgroup). These workgroups will provide the technical assistance needed to support the efforts of the Island Asthma Coalitions.

During the strategic planning process, all Island Asthma Coalitions were encouraged to determine what activities they would like to see implemented in their community to assure ownership. All chosen activities were based on a specified frame of reference to assure alignment of all asthma activities across the State - current asthma surveillance findings, addressing disparities, and the HAP. The alignment of all coalition activities will provide an atmosphere of collaboration within and across island coalitions. Other strategies that are being used to improve community readiness to mobilize include: (1) providing seed funding for coalition start-up; (2) encouraging coalitions to use start-up funds to leverage other grants; (3) allow coalitions flexibility in how they utilize funds; (4) recommend coalitions to seek out in-kind contributions; (5) continually align activities with other asthma-related groups; (6) encourage the use of logic models and SMART (specific, measurable, achievable, realistic, time-bound) objectives in activity planning; (7) evaluate interventions utilizing the CDC 6-step Framework for Program Evaluation in Public Health[6]; and (8) align the expected outcomes of all activities to the Healthy People 2010 objectives relating to asthma (Appendix 1), and/or one or more of the Essential Public Health Services (Appendix 2).


national asthma awareness month
Childhood Rural Asthma Project
know that even one life has breathed easier because you have lived. is to have succeeded."

Hawaii Asthma Initiative Workgroups

- Data and Surveillance Workgroup
- Individual / Family / Community Workgroup
- Health Professional Workgroup
- Environmental Workgroup

Hawaii Asthma Initiative Workgroups

The Hawaii Asthma Initiative (HAI) workgroups are charged to provide technical assistance and support to Island Asthma Coalitions in these four content areas: (1) Data and Surveillance; (2) Individual / Family / Community; (3) Health Professional; and (4) Environmental.

The four workgroups are open to all asthma stakeholders and will be comprised of volunteer representatives from the various sectors and disciplines of Hawaii's State Asthma Health System (SAHS): physicians, public health professionals, respiratory therapists, pharmacists, emergency medical care providers, managed care directors, state health department staff, nurses/nurse practitioners, community health specialists, health educators, school personnel, community organizations and coalitions, program administrators/planners, and health policy officials.

Data and Surveillance Workgroup

The goal of the Data and Surveillance Workgroup is to increase Hawaii's asthma-related surveillance capacity through the construction of a Comprehensive State Asthma Surveillance System (CSASS).

The Data and Surveillance Workgroup will provide technical assistance and support to the Island Asthma Coalitions in developing strategies to accomplish the following objectives:

- The CSASS will develop, manage, track, and analyze a uniform set of asthma health status indicators that are derived from a variety of sources (e.g., hospitals, insurers, and the Hawaii State Department of Health). The CSASS will accommodate state and local asthma-related data needs and identify at-risk and/or disparate populations.
- To share all available and relevant asthma-related data with stakeholders statewide.
- Policies and procedures related to asthma surveillance will be developed and supported.

Hawaii Asthma Initiative Workgroups

Individual / Family / Community Workgroup

The goal of the Individual / Family / Community Workgroup is to ensure: (1) residents of Hawaii will be aware of asthma and opportunities for individuals with asthma, their families, and communities to identify and manage the disease; and (2) Hawaii's individuals with asthma and their families will be empowered to effectively manage this disease.

The Individual / Family / Community Workgroup will provide technical assistance and support to the Island Asthma Coalitions in developing strategies to accomplish the following objectives:

- Residents of Hawaii will have an increased awareness about asthma; including asthma triggers, early detection, and the importance of having regular asthma care.
- Hawaii's individuals with asthma and their families will be empowered to effectively manage this disease.
- Policies and procedures that improve the quality and years of healthy life for individuals with asthma, their families, and the community will be developed and supported.

Health Professional Workgroup

The goal of the Health Professional Workgroup is to ensure Hawaii's health professionals will provide quality asthma care based on the most consistent, appropriate and current evidence based disease management guidelines.

The Health Professional Workgroup will provide technical assistance and support to the Island Asthma Coalitions in developing strategies to accomplish the following objectives:

- Hawaii's health professionals will understand the role of appropriate disease management in lowering the burden of asthma in Hawaii.
- Hawaii's health professionals will have a better understanding of the National Asthma Education and Prevention Program (NAEPP) four essential components of care and the ten key clinical activities for providing quality asthma care.
- Hawaii's health professionals will have increased awareness of the wide range of clinical research projects/findings, and public health interventions, as well as the need to address disparities through targeted strategies focused on asthma in Hawaii.
- Policies and procedures that improve the State Asthma Health System will be developed and supported.

Hawaii Asthma Initiative Workgroups

Environmental Workgroup

The goal of the Environmental Workgroup is to ensure that Hawaii's individuals with asthma are able to work, go to school, and live in environments with good air quality.

The Environmental Workgroup will provide technical assistance and support to the Island Asthma Coalitions in developing strategies to accomplish the following objectives:

- Create and advocate for an agenda that addresses environmental issues related to asthma.
- Align existing agencies that focus on indoor, outdoor, and worksite air quality.
- Reduce exposure to air pollutants among individuals with asthma in the workplace, in schools, and in the environment.
- Align existing agencies that focus on tobacco related issues (prevention, education, policy).
- Reduce tobacco use and exposure to secondhand smoke among individuals with asthma and their caregivers.
- Environmental policies and procedures related to asthma will be developed and supported.

Hawaii Asthma Plan

Goals, Objectives, Strategies, & Process Measures

- Data and Surveillance
- Individual / Family / Community
- Health Professional
- Environmental

Data and Surveillance

Goals, Objectives, Strategies, and Process Measures

GOAL 1 Hawaii's asthma-related surveillance capacity will be increased through the construction of a Comprehensive State Asthma Surveillance System (CSASS).

OBJECTIVE 1 Develop, manage, track, and analyze a uniform set of asthma health status indicators that are derived from a variety of sources (e.g., hospitals, insurers, and the Hawaii State Department of Health). The CSASS will accommodate state and local asthma-related data needs and identify at-risk and/or disparate populations.

Strategy 1.1 Convene asthma data workgroup to identify, through consensus, a uniform set of asthma health status indicators that will be included in the CSASS.

Process Measure 1.1

A report that establishes a uniform set of asthma-related health status indicators completed.

Strategy 1.2 Maintain funding and data analysis of Behavioral Risk Factor Surveillance System (BRFSS) asthma core modules, optional modules, and state-added questions.

Process Measure 1.2

Asthma core and optional module questions included in Hawaii BRFSS for 2006 – 2011. A report based on asthma-related BRFSS data completed.

Strategy 1.3 Collect and analyze asthma-related hospitalization data.

Process Measure 1.3

A report on asthma-related hospitalizations rates, trends, and costs completed.

Strategy 1.4 Collect and analyze asthma-related Medicaid data.

Process Measure 1.4

A report on asthma-related Medicaid utilization rates completed.

Strategy 1.5 Establish new partnerships and develop memorandums of agreement / understanding with agencies/data sources for the collection of asthma-related health status indicators identified as a part of the uniform set but not yet collected.

Process Measure 1.5

Memorandums of agreement/understanding between the Hawaii State Department of Health and all agencies/data sources established.

Strategy 1.6 Collaborate with the Hawaii State Department of Health's Office of Health Status Monitoring for the collection and analysis of asthma-related mortality data.

Process Measure 1.6

A report on asthma-related mortality rates completed.

OBJECTIVE 2 Share all available and relevant asthma-related data with stakeholders statewide.

Strategy 2.1 Create an asthma burden report based on a uniform and standardized set of asthma-related health status indicators that profiles trends in health status, risk factors, resource consumption, and potential public health threats.

Process Measure 2.1

A report that compares the state asthma profile with national health objectives and other standardized benchmarks (Healthy People 2010 goals) completed.

Strategy 2.2 Publish and disseminate an asthma burden report based on the uniform set of asthma-related health status indicators collected by the CSASS.

Process Measure 2.2

Asthma burden report disseminated statewide via various mechanisms (e.g. publication, web-based) in 2007.

OBJECTIVE 3 Develop and support policies and procedures related to asthma surveillance.

Strategy 3.1 Convene the Data and Surveillance Workgroup to identify, through a consensus, policies and procedures necessary to assure the sustainability of asthma-related surveillance.

Process Measure 3.1

Recommendations regarding policies and procedures related to asthma surveillance disseminated.

Individual / Family / Community

Goals, Objectives, Strategies, & Process Measures

GOAL 1 Residents of Hawaii will be aware of asthma and opportunities for individuals with asthma, their families, and communities to identify and manage the disease.

OBJECTIVE 1 Increase awareness of asthma among residents of Hawaii; including asthma triggers, early detection, and the importance of having regular asthma care.

Strategy 1.1 Identify current asthma awareness-raising activities in Hawaii (e.g. May is Asthma Awareness Month, World Asthma Day, Proclamations).

Process Measure 1.1

An inventory of current asthma awareness-raising activities in Hawaii added to Hawaii's asthma resource directory.

Strategy 1.2 Identify key elements of a public awareness message on asthma.

Process Measure 1.2

Key elements of a public awareness message on asthma identified.

Strategy 1.3 Create standard core messages about asthma and its risk factors for use in future campaigns.

Process Measure 1.3

Standard core messages shared with participants involved in "May is Asthma Awareness Month" events and campaigns.

Strategy 1.4 Encourage adoption of standard core messages by other organizations to assure consistency of information.

Process Measure 1.4

Standard core messages adopted by organizations involved in asthma awareness.

Strategy 1.5 Collaborate on the development and implementation of an awareness event and campaign surrounding "May is Asthma Awareness Month".

Process Measure 1.5

Collaboration among organizations involved in "May is Asthma Awareness Month" events and campaigns identified.

Strategy 1.6 Utilize national asthma awareness event and campaign materials locally.

Process Measure 1.6

Local asthma awareness events and campaigns utilizing national materials completed.

GOAL 2 Hawaii's individuals with asthma and their families will be empowered to effectively manage this disease.

OBJECTIVE 2 Enhance and expand existing asthma educational programs and services aimed at teaching individuals with asthma, their families, and the community on effective asthma management skills, while focusing on disparate populations and culturally appropriate strategies.

Strategy 2.1 Identify all current existing asthma educational programs and services.

Process Measure 2.1

Asthma resource list developed and disseminated statewide through various mechanisms (web-based and publication).

Strategy 2.2 Create a web-based repository that houses information on asthma programs and services statewide.

Process Measure 2.2

A web-based repository that houses information on asthma programs and services for each island established.

Strategy 2.3 Utilizing the most current surveillance data available, identify at-risk and/or disparate populations for asthma educational programs and services and/or awareness campaigns.

Process Measure 2.3

At-risk and/or disparate populations identified.

Strategy 2.4 Enhance and expand culturally appropriate asthma educational programs and services aimed at at-risk and/or disparate populations.

Process Measure 2.4

Educational programs and services in an identified at-risk and/or disparate population enhanced and/or expanded.

Strategy 2.5 Enhance and expand culturally appropriate asthma awareness campaigns aimed at at-risk and/or disparate populations.

Process Measure 2.5

Asthma awareness campaigns in an identified at-risk and/or disparate population enhanced and/or expanded.

OBJECTIVE 3 Develop and support policies and procedures that improve the quality and years of healthy life for individuals with asthma, their families, and the community.

Strategy 3.1 Convene the Individual / Family / Community Workgroup to identify, through a consensus, policies and procedures that improve the quality and years of healthy life for individuals with asthma, their families, and the community.

Process Measure 3.1

Recommendations regarding policies and procedures related to individuals with asthma, their families, and the community disseminated.

Health Professional

Goals, Objectives, Strategies, & Process Measures

GOAL 1 Hawaii's health professionals will provide quality asthma care based on the most consistent, appropriate and current evidence based disease management guidelines.

OBJECTIVE 1 Increase understanding among Hawaii's health professionals about the role of appropriate disease management in lowering the burden of asthma in Hawaii.

Strategy 1.1 Provide health professionals with opportunities to better understand the link between disease management and the asthma burden in Hawaii by utilizing the most current surveillance data available (BRFSS, hospitalizations, claims data).

Process Measure 1.1

Findings of the asthma burden report disseminated statewide via various mechanisms (e.g. publication, web-based) to health professionals.

Strategy 1.2 Provide health professionals with updates on the most consistent, appropriate, and current evidence based guidelines for asthma management.

Process Measure 1.2

Updates on the most consistent, appropriate, and current evidence based guidelines for asthma management disseminated statewide via various mechanisms (e.g. publication, web-based) to health professionals when appropriate.

Strategy 1.3 Develop an appropriate mechanism to disseminate the most current evidence based guidelines for asthma management.

Process Measure 1.3

A consensus among the Health Professional Workgroup on the mechanism for the dissemination of current evidence based guidelines for asthma management reached.

OBJECTIVE 2 Increase understanding among Hawaii's health professionals of the National Asthma Education and Prevention Program (NAEPP) four essential components of care and the ten key clinical activities for providing quality asthma care.

Strategy 2.1 Adopt and promote a consistent and appropriate asthma curriculum for health professionals based on the most current evidence based guidelines.

Process Measure 2.1

A consensus among the Health Professional Workgroup on the adoption of a consistent and appropriate asthma curriculum for health professionals reached.

Strategy 2.2 Educate health professionals on the following NAEPP four essential components of care.

Component #1: Assessment and monitoring: establish asthma diagnosis; classify severity of asthma; schedule routine follow-up; assess for referral to specialty care.

Component #2: Control of factors contributing to asthma severity: recommend measures to control asthma triggers; treat or prevent co-morbid conditions.

Component #3: Pharmacotherapy: prescribe medications according to severity; monitor use of Beta2-agonist drugs.

Component #4: Education for partnerships in care: develop a written asthma management plan, provide routine education on patient self-management.

Process Measure 2.2

Continuing education programs for health professionals on the NAEPP four essential components of care and the ten key clinical activities for providing quality asthma care held.

OBJECTIVE 3 Increase awareness among Hawaii's health professionals of the wide range of clinical research projects/findings, and public health interventions, as well as the need to address disparities through targeted strategies focused on asthma in Hawaii.

Strategy 3.1 Create partnerships between existing agencies to conduct annual asthma consortium.

Process Measure 3.1

A consortium for health professionals on clinical research projects / findings, and public health interventions held.

OBJECTIVE 4 Develop and support policies and procedures that improve the State Asthma Health System.

Strategy 4.1 Convene the Health Professional Workgroup to identify, through a consensus, policies and procedures that improve asthma-related health professional programs and services.

Process Measure 4.1

Recommendations regarding policies and procedures related to the State Asthma Health System disseminated.

Environmental

Goals, Objectives, Strategies, & Process Measures

GOAL 1 Hawaii's individuals with asthma will be able to work, go to school, and live in environments with good air quality.

OBJECTIVE 1 Create an agenda that addresses environmental issues related to asthma.

Strategy 1.1 Enhance and expand Hawaii's surveillance capacity related to environmental issues related to asthma.

Strategy 1.2 Identify agencies that have a stake in environmental issues related to asthma (e.g. air quality).

Strategy 1.3 Reach a consensus on what environmental issues related to asthma needs to be addressed.

Process Measure 1.1 – 1.3

The Hawaii Asthma Initiative environmental agenda completed.

Strategy 1.4 Develop an appropriate mechanism to carry out Hawaii Asthma Initiative's environmental agenda.

Process Measure 1.4

A consensus on the mechanism to carry out the Hawaii Asthma Initiative environmental agenda reached.

OBJECTIVE 2 Align existing agencies that focus on indoor, outdoor, and worksite air quality.

Strategy 2.1 Create partnerships between existing asthma and air quality agencies.

Process Measure 2.1

Memorandums of agreement/understanding between appropriate agencies established.

Strategy 2.2 Enhance and expand Hawaii's surveillance capacity related to asthma and air quality through a joint effort between the Hawaii State Asthma Control Program and appropriate air quality agencies.

Process Measure 2.2

A joint report on asthma and air quality completed.

OBJECTIVE 3 Reduce exposure to air pollutants among individuals with asthma in the workplace, in schools, and in the environment.

Strategy 3.1 Develop and share standard core messages related to asthma and air quality on the following key elements: (1) exposure to secondhand smoke among individuals with asthma; (2) tobacco prevention and cessation among youth; (3) tobacco cessation among adults with asthma and caregivers of individuals with asthma.

Process Measure 3.1

Standard core messages related to asthma, air quality, tobacco use adopted.

OBJECTIVE 4 Align existing agencies that focus on tobacco related issues (prevention, education, policy).

Strategy 4.1 Create partnerships between existing asthma and tobacco agencies.

Process Measure 4.1

Memorandums of agreement/understanding between appropriate agencies established.

Strategy 4.2 Enhance and expand Hawaii's surveillance capacity related to asthma and tobacco use through a joint effort between the Hawaii State Asthma Control Program and the Tobacco Prevention and Education Program.

Process Measure 4.2

A joint report on asthma and tobacco use completed.

OBJECTIVE 5 Reduce tobacco use and exposure to secondhand smoke among individuals with asthma and their caregivers.

Strategy 5.1 Develop and share standard core messages related to asthma and tobacco use on the following key elements: (1) exposure to secondhand smoke among individuals with asthma; (2) tobacco prevention and cessation among youth; (3) tobacco cessation among adults with asthma and caregivers of individuals with asthma.

Process Measure 5.1

Standard core messages related to asthma, air quality, tobacco use adopted.

OBJECTIVE 6 Develop and support environmental policies and procedures related to asthma.

Strategy 6.1 Convene the Environmental Workgroup to identify, through a consensus, policies and procedures necessary to assure the sustainability of asthma-related environmental programs and services.

Process Measure 6.1

Recommendations regarding environmental policies and procedures related to asthma disseminated.


Hawaii
Asthma
Consortium
2004

Appendices

- Appendix 1: Healthy People 2010: National Goals & Objectives for Asthma
- Appendix 2: The Essential Public Health Services
- Appendix 3: Program Evaluation
- Appendix 4: About the Data
- Appendix 5: Data Definitions
- Appendix 6: References
- Appendix 7: Glossary

Appendix 1

Healthy People 2010: National Goals & Objectives for Asthma

Healthy People 2010 is designed to achieve two over-arching goals: (1) to increase quality and years of life; and (2) to eliminate health disparities.

Healthy People 2010: National Objectives for Asthma

24.1 Reduce asthma ***deaths.***

24.2 Reduce ***hospitalizations*** for asthma.

24.3 Reduce hospital ***emergency department visits*** for asthma.

24.4 Reduce ***activity limitations*** among persons with asthma.

24.5 (Developmental) Reduce the number of ***school or work days missed*** by persons with asthma due to asthma.

24.6 Increase the proportion of persons with asthma who receive formal ***patient education***, including information about community and self-help resources, as an essential part of the management of their condition.

24.7 (Developmental) Increase the proportion of persons with asthma who receive ***appropriate asthma care*** according to the NAEPP guidelines.

24.8 (Developmental) Establish in at least 15 States a ***surveillance system*** for tracking asthma death, illness, disability, impact of occupational and environmental factors on asthma, access to medical care, and asthma management.

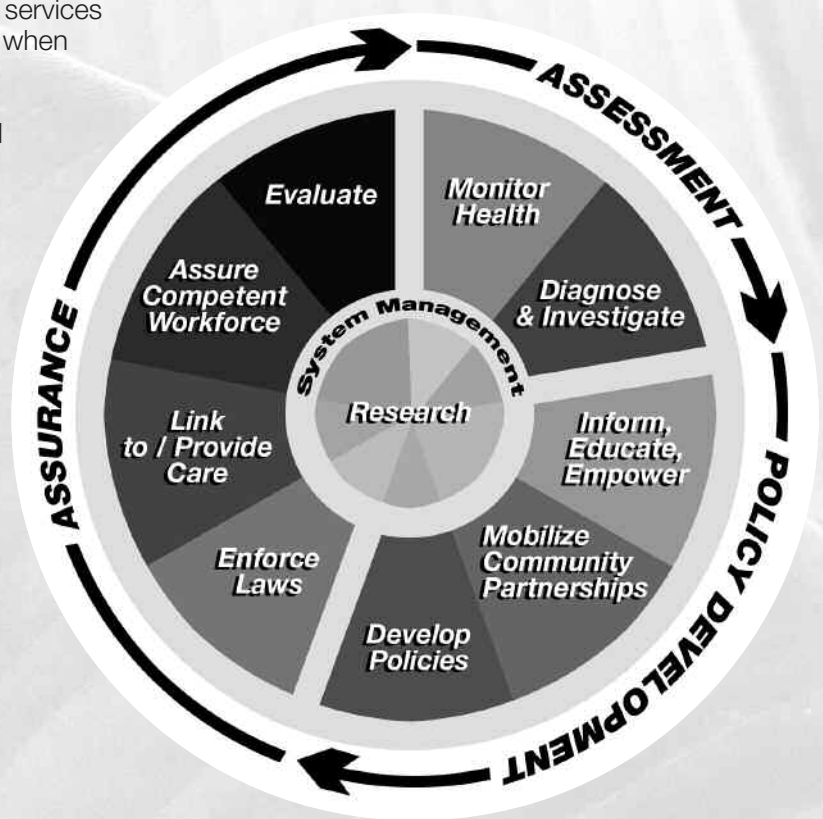
The priority areas for investment over the next five years are:

- Determine the causes of asthma and develop interventions to prevent its onset.
- Reduce the burden for people living with asthma.
- Eliminate the disproportionate health burden of asthma in minority populations and those living in poverty.
- Track the disease and assess the effectiveness of asthma programs.

The Essential Public Health Services

The Essential Public Health Services provide the fundamental framework for the NPHPSP instruments, by describing the public health activities that should be undertaken in all communities. The Core Public Health Functions Steering Committee developed the framework for the Essential Services in 1994. This steering committee included representatives from US Public Health Service agencies and other major public health organizations. The Essential Services provide a working definition of public health and a guiding framework for the responsibilities of local public health systems.

1. ***Monitor*** health status to identify and solve community health problems.
2. ***Diagnose and investigate*** health problems and health hazards in the community.
3. ***Inform, educate, and empower*** people about health issues.
4. ***Mobilize*** community partnerships and action to identify and solve health problems.
5. ***Develop policies and plans*** that support individual and community health efforts.
6. ***Enforce*** laws and regulations that protect health and ensure safety.
7. ***Link*** people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. ***Assure*** competent public and personal health care workforce.
9. ***Evaluate*** effectiveness, accessibility, and quality of personal and population-based health services.
10. ***Research*** for new insights and innovative solutions to health problems.



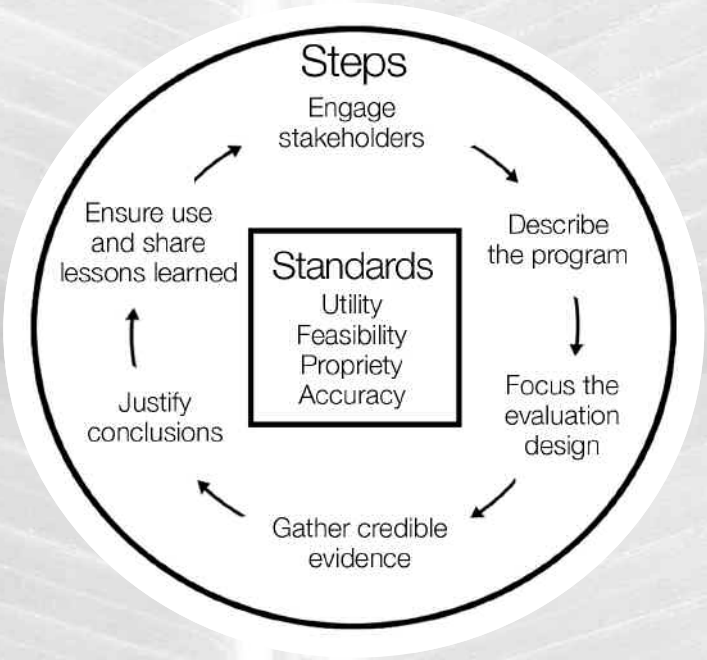
Appendix 3

Program Evaluation

Effective program evaluation is a systematic way to improve and account for public health actions that involves procedures that are useful, feasible, ethical, and accurate. The Centers for Disease Control and Prevention's (CDC) six-step Framework for Program Evaluation in Public Health guides public health professionals in their use of program evaluation. It is a practical, non-prescriptive tool, designed to summarize and organize essential elements of program evaluation. The framework comprises steps in program evaluation practice and standards for effective program evaluation. Adhering to the steps and standards of this framework will allow an understanding of each program's context and will improve how program evaluations are conceived and conducted.[6]

To track progress toward achieving the goals and objectives of the Hawaii Asthma Plan (HAP) over time, the HAI will measure a variety of outcomes. Measures can come from a review of standardized measurement sets established by national organizations (Appendix 1, 2). Performance and outcome measures for all of the activities related to the HAP should be established by the organizations and workgroups involved. One example of a tool recommended by CDC to evaluate activities in public health is illustrated below.

Centers for Disease Control and Prevention's (CDC)
six-step Framework for Program Evaluation in Public Health



Appendix 4

About the Data

The information presented in this report are based on these data sources: (1) Hawaii Behavioral Risk Factor Surveillance System (BRFSS) data for 2002, (2) asthma hospitalization data (0 –19 years of age) from the Hawaii Health Information Corporation (HHIC) for the years 1996 to 2001, (3) mortality data from Hawaii vital statistics records for the years 1991 to 2002, and (4) the Centers for Disease Control and Prevention's (CDC) web publications.

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is the largest continuously conducted telephone health survey in the world. The BRFSS is conducted by the Hawaii Department of Health in collaboration with the CDC. Hawaii has been an active participant in the BRFSS since the early nineties. The BRFSS enables the CDC, state health departments, and other health and education agencies to monitor risk behaviors related to chronic diseases, injuries and death. State health departments use BRFSS data to create annual and periodic reports, fact sheets, press releases, or other publications, which are used to educate the public, the professional health community, and policymakers about the prevalence of modifiable behavioral risk factors and of preventive health screening practices. Data collected through the BRFSS is routinely used to capture health information on demographically defined subgroups (ethnicity, gender, age, educational level, income level, geographic location).

Confidence intervals have been provided in the BRFSS section of this report as an efficient way to look for differences among subgroups on important health issues, and serves as an important tool when it comes to looking for patterns in BRFSS reports. A confidence interval is a range that contains the true population prevalence estimate with a certain degree of assurance when repeated sampling of the population is performed. The degree of assurance commonly used is 95%. For example, if we set our confidence interval at 95%, then we can expect that 5 out of 100 times the estimates coming from our samples will fall outside the range that contains the true population value. However, 95% of the time our estimates will fall within the correct range. This is known as a 95% confidence interval. Confidence intervals are used to assess if there are differences in prevalence among defined subgroups. It is a quick and simple way to determine if such differences are potentially significant (statistically). For example, the analysis of current asthma prevalence by ethnicity shows that females have a higher current asthma prevalence rate when compared with males (9.2% versus 4.5%) and the confidence intervals around these prevalence estimates do not overlap (figure 11). Based on this finding, it is reasonable to say that "likely significant differences" of current asthma prevalence does exist between females and males in this state. However, in order to say that there are statistically significant differences of current asthma prevalence between females and males, a formal test of significance would have to be conducted (e.g., t-test, chi-square test).

Appendix 4

About the Data

Hospitalization Data

The Hawaii Health Information Corporation (HHIC) is a private, not-for-profit corporation established in 1994. HHIC maintains one of Hawaii's largest healthcare databases, which contains nearly 1,000,000 inpatient discharge records collected from Hawaii's 22 acute care hospitals for each year since 1993. HHIC's mission is to collect, analyze and disseminate statewide health information to support efforts to continuously improve the quality and cost-efficiency of Hawaii's health care services. Through HHIC's comprehensive database and expert analytical capabilities, organizations are provided with information essential to health care quality management, community assessment, planning and policy analysis, and research.

Mortality Data (Vital Statistics)

The Office of Health Status Monitoring (OHSM) of the Hawaii Department of Health collects, processes, analyzes and disseminates relevant, population-based data in a timely fashion in order to assess the health status of Hawaii's population and to fulfill health statistics legal requirements. The office also provides vital statistics, demographic and health data for use in identifying state and community health trends, identifying population groups at risk for serious health problems and evaluating program effectiveness. Other OHSM activities include: maintaining health surveys for the purpose of collecting data on health conditions not otherwise monitored within the state yet needed to analyze health status; disseminating information through published reports and through visual presentations such as charts, graphs and maps; and coordinating the integration and linkage of departmental databases with external databases. The OHSM also provides a repository for vital event records with the state such as births, deaths and marriages and to provide copies to the general public on a timely basis. OHSM also issues marriage licenses as well as marriage, birth and death certificates.

Appendix 5

Data Definitions

Asthma Prevalence

Prevalence is the number of cases of a disease, infected persons, or persons with some other attribute present during a particular interval of time. It is often expressed as a rate (for example, the prevalence of diabetes per 1,000 persons during a year).

Adult Lifetime Asthma Prevalence is defined by the Hawaii Behavioral Risk Factor Surveillance System (BRFSS) as those who responded yes to the question, "Have you ever been told by a doctor, nurse, or other health professional that you had asthma?"

Adult Current Asthma Prevalence is defined by the Hawaii BRFSS as those who responded yes to the Adult Lifetime Asthma Prevalence question, and who responded yes to the question, "Do you still have asthma?"

Child Lifetime Asthma Prevalence is defined by the Hawaii BRFSS by asking this question to adult respondents with children in the home: "Earlier you said there were [ ] children 17 or younger living in your household. How many of these children have ever been diagnosed with asthma?"

Child Current Asthma Prevalence is defined by the Hawaii BRFSS by asking adult respondents who reported having children in the household that have been diagnosed as "ever" having asthma the following question: Does this child/how many of these children still have asthma?"

Race/Ethnicity

Respondents are asked to choose one race from the race list to answer the question: "What is your race?" The race list includes Caucasian, Hawaiian, Chinese, Filipino, Japanese, Korean, Samoan, Black, American Indian/Alaska native/Eskimo/Inuit, Vietnamese, Asian Indian, Portuguese, Guamanian/Chamorro, Puerto Rican, Mexican, Tongan, Laotian, Cambodian, Malaysian, Fijian, Micronesian, and other Asian. In addition, a respondent can specify their own ethnicity if it is not listed, or they can say they don't know, they are not sure, or they refuse to answer. For simplicity, this document re-categorizes ethnicity into White (includes Portuguese), Hawaiian, Filipino, Japanese, and "Others" (includes Chinese).

Immunization

The Hawaii BRFSS defines **influenza vaccine** receipt as those adults responding yes to the question, "During the past 12 months, have you had a flu shot?"

The Hawaii BRFSS defines **pneumococcal pneumonia vaccine** receipt as those adults responding yes to the question, "Have you ever had a pneumonia shot? This shot is usually given only once or twice in a person's lifetime and is different from the flu shot. It is called the pneumonia vaccine."

Appendix 5

Data Definitions

Hospitalization

An **asthma hospitalization** is defined as a hospitalization (Hawaii residents only) with a primary diagnosis of 493.xx (ICD.9). The definition excludes newborns, pregnancy-related admissions and patients admitted through a transfer from another facility.

Mortality

The **mortality rate** is the frequency of occurrence of death in a defined population. The **underlying cause of death** is the disease/condition that initiated the train of events leading to death. **Contributory causes of death** are diseases/conditions did not initiate the train of events leading to death, but resulted in death directly or indirectly; or any other significant conditions which unfavorably influenced the course of the morbid process and thus contributed to the fatal outcome.

Obesity

Body Mass Index (BMI) is used to define obesity in this document. BMI is defined as weight in kilograms divided by the square of height in meters (kg/m2). Based on federal guidelines, bodyweight is categorized by BMI as follows:

Not Overweight/Obese	BMI < 25.0
Overweight	25.0 < BMI < 30.
Obese	BMI > 30.0

Mental Health

Depressive symptoms are measured by the Hawaii BRFSS by asking the question, “During the past 30 days, for about how many days have you felt sad, blue, or depressed?”

Anxiety symptoms are measured by the Hawaii BRFSS by asking the question, “During the past 30 days, for about how many days have you felt worried, tense, or anxious?”

Sleep is measured by the Hawaii BRFSS by asking the question, “During the past 30 days, for about how many days have you felt you did not get enough rest or sleep?”

Appendix 6

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Appendix 7:

Glossary*

Acrylates: A class of chemicals often used in paints, adhesives, plastics, and textile and paper finishes.

Action Plan: A written, easy-to-understand description of how to manage an asthma exacerbation, including information that outlines the early signs of worsening asthma, the medications to use and how to use them, and specific instructions for when to contact the clinician or emergency department.

Acute: Having a short and relatively severe course.

Adherence: The faithful following of an asthma management plan by the patient. It typically refers to the degree to which the patient takes his/her medication(s) as prescribed.

Airway Hyper-responsiveness: An exaggerated narrowing of the airways in response to a wide variety of stimuli, including allergens, environmental irritants, viral infection, cold air, or exercise, which limits airflow.

Airway Obstruction: Reduced airflow in the airways. It can be caused by acute narrowing of the airways, or by edema, mucus plug formation, or remodeling.

Airway Remodeling: Structural changes that are unlikely to be reversible, resulting from continued inflammation seen in chronic asthma. Permanent changes include continued loss of epithelial cells, deposition of subbasement membrane collagen, and increased muscle mass and blood vessels.

Albuterol: A beta-adrenergic agent used as a bronchodilator for the treatment and prevention of reversible bronchospasm in obstructive airway disease, including asthma.

Allergen: The source of an allergy-producing substance, the allergy-producing substance itself, or one or more of the specific proteins that make up the substance and provoke the immune response, including IgE antibodies. Allergens are often common, usually harmless substances such as pollen, mold spores, animal dander, dust, foods, insect venoms, and drugs.

Alveoli: Tiny outpouchings along the walls of the smallest airways in the lungs through which gas exchange takes place with the blood.

American Lung Association (ALA): A privately funded organization that fights lung disease in all its forms with special emphasis on asthma, tobacco control, and environmental health.

Anaphylaxis: The most severe form of an allergic reaction, it is a rapid, potentially fatal, whole-body reaction to allergens to which the patient has been previously exposed and sensitized. The reaction generally results from an IgE-mediated rapid release of potent substances from tissue mast cells and peripheral blood cells. Common causes are foods, drugs, and insect stings. Symptoms may include itching, hives, swelling, shortness of breath, wheezing, diarrhea, and shock.

Anhydrides: A group of chemicals involved in the production of resins and epoxies that can trigger asthma.

Antihistamine: A drug that inhibits many types of allergy symptoms by counteracting the actions of histamine.

Anti-inflammatory: A drug that counteracts inflammation. It is used to treat the basic underlying process in asthma.

Asthma: A chronic inflammatory disease of the airways characterized by airway obstruction, which is at least partially reversible with or without medication, and manifests as increased bronchial responsiveness to a variety of stimuli.

Atopic Dermatitis: A chronic or recurrent atopic inflammatory skin disease that usually begins in the first few years of life. It is often the initial clinical manifestation of an atopic predisposition, with many children later developing asthma and/or allergic rhinitis.

Atopy: The genetic tendency to develop the "classical" allergic diseases, ie., allergic rhinitis, asthma, and atopic dermatitis. Atopy is usually associated with a genetically determined capacity to mount IgE responses to common allergens, especially inhaled allergens and food allergens.

Attack: An acute episode of asthma in which the airways leading to the lungs become obstructed and breathing becomes difficult.

* Glossary adapted from the National Asthma Training Curriculum, COC, August 2004.

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Barrier to Adherence: The reason that prevents a patient from following the asthma management plan as agreed upon with the physician.

Behavioral Risk Factor Surveillance System (BRFSS): A state-based, random telephone survey of non-institutionalized civilian adults designed to monitor the prevalence of the major behavioral risks associated with premature morbidity and mortality among adults.

Beta²-agonist: Drug used in the treatment of asthma due to its ability to relax bronchial smooth muscle. It is used for short-acting quick relief, long-term 12-hour control, or to prevent exercise-induced bronchospasm.

Bronchi: Any of the larger air passages of the lungs connecting the trachea to the bronchioles.

Bronchial Hyper-reactivity: An exaggerated narrowing of the airways in response to a wide variety of stimuli, including allergens, environmental irritants, viral infection, cold air, or exercise, which limits airflow. Also called airway hyper-responsiveness.

Bronchiole: One of the smaller, branching air passages of the lungs connecting the bronchi to the alveoli.

Bronchodilator: A drug that relaxes the muscles and widens the airways leading to the lungs making breathing easier.

Bronchoprovocation: A test in which a patient purposely inhales a substance with pulmonary function monitored before and after. It is most commonly conducted with methacholine to screen for the presence of airway hyper-responsiveness. It is typically used in patients in whom asthma is suspected but who have normal lung function as determined by spirometry.

Bronchospasm: Involuntary contraction of the muscles in the airways leading to the lungs that causes the airways to become narrower making breathing difficult.

CDC Wonder: An on-line public health information system of the CDC that can provide numbers and rates of sexually transmitted diseases, cancer cases, or deaths in the United States. Users can request data for any disease and demographic group by submitting ad hoc queries against available datasets.

Centers for Disease Control and Prevention: The lead federal agency of the U.S. for protecting the health and safety of people – at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships. CDC serves as the national focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities designed to improve the health of the people of the United States.

Chlorofluorocarbon (CFC): A propellant used until recently in metered-dose inhalers to deliver inhaled medications. It has been replaced by other propellants since chlorofluorocarbons deplete the ozone layer.

Chronic: Persisting over a long period of time.

Chronic obstructive pulmonary disease: A group of chronic lung diseases characterized predominantly by an irreversible reduction in airflow. Emphysema and bronchitis are examples, while asthma is not.

Chronic Rhinitis: Inflammation of the mucous membranes of the nose with symptoms of sneezing, itching, nasal discharge, and congestion. The cause can be allergic, nonallergic, or both.

Coalition: A combination of groups drawn together, usually temporarily, for a common purpose.

Colophony: Resin obtained from pine that has been widely used in the preparation of plasters and ointments, as well as chewing gums, varnishes, and polishes. Its usage has declined because it is a common cause of contact allergy.

Complementary and Alternative Medicine: Drugs available as herbs, vitamins, or nutrients, as well as techniques such as acupuncture and yoga, not normally employed by a physician in the treatment of disease.

Controller Medication: A medication taken daily on a long-term basis to achieve and maintain control of persistent asthma. Examples include corticosteroids, cromolyn sodium, nedocromil sodium, long-acting beta2-agonists, leukotriene modifiers, and methylxanthines.

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Corticosteroids: Medications related to cortisone with anti-inflammatory effects useful in many allergic conditions. Newer preparations for lung, nasal, and skin use minimize the risk of side effects. Used as a controller medication in asthma.

Cough-variant: Asthma characterized by minimal wheezing and a nonproductive, often severe, cough lasting from a few hours to days.

Council of State and Territorial Epidemiologists (CSTE): A national organization of epidemiologists that promotes the effective use of epidemiologic data to guide public health practice and improve health. This is accomplished by supporting the use of effective public health surveillance and good epidemiologic practice through training, capacity development, and peer consultation, developing standards for practice, and advocating for resources and scientifically based policy.

Cromolyn Sodium: Topical nonsteroidal anti-inflammatory agent.

Dermatitis: Inflammation of the skin, usually due to an allergy.

Diaphragm: The muscle separating the abdomen from the chest that assists in breathing.

Diastolic blood pressure: The blood pressure that occurs between heart beats.

Diisocyanates: A group of chemicals often used in the manufacture of foam insulation, spray paints, plastic, or rubber that can trigger asthma.

Diurnal: Something that occurs during the day, usually at the same time each day.

Dry Powder Inhaler (DPI): Delivery mechanism without propellant for inhaled medications that are in powdered form.

Dust Mite: A microscopic, often transparent insect that lives in bedding, carpeting, stuffed toys. When inhaled it can produce an allergic reaction leading to inflammation in the lung.

Eczema: An inflammatory disease of the skin with lesions that can be erythematous, edematous, papular, crusting, lichenified, scaling, itching, or burning. "Atopic eczema" is often used synonymously with the term "atopic dermatitis"

Environmental Protection Agency: The federal agency whose mission is to protect human health and to safeguard the natural environment – air, water, and land – upon which life depends. EPA provides leadership in the nation's environmental science, research, education and assessment efforts. EPA works closely with other federal agencies, state and local governments, and Indian tribes to develop and enforce regulations under existing environmental laws. EPA is responsible for researching and setting national standards for a variety of environmental programs and delegates to states and tribes responsibility for issuing permits, and monitoring and enforcing compliance.

Epidemiology: The study of the distribution and determinants of disease in populations.

Epinephrine: A chemical produced by the body or administered via injection that stimulates the sympathetic nervous system. It is used in asthma as a bronchodilator in a severe, acute asthma exacerbation.

Epi-Pen: A pre-packaged syringe containing epinephrine used in a severe, acute asthma exacerbation to cause bronchodilation.

Episode: A significant event or occurrence in the course of an illness, such as an acute asthma attack.

Exacerbation: Period of unstable, worsening asthma generally characterized by increased coughing, wheezing, and/or a decrease in pulmonary function.

Exercise-induced Bronchospasm (Exercise-induced Asthma): Narrowing of the airways leading to the lung caused by the loss of heat, water, or both from the airways during exercise. It is caused by increased ventilation and inhalation of cool, dry air compared to the air within the lungs.

Existing Clinical Databases: An organized collection of information that might include history, physical, laboratory, or similar data from one or more settings such as hospital, outpatient, clinic, or emergency department. It generally includes computerized information about hundreds or thousands of persons.

Flare: A sudden exacerbation or worsening of a disease.

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Foradil: The trade name for the long-acting inhaled beta^2-agonist formoterol.

Forced Expiratory Volume in One Second (FEV1): The amount of air that is forcefully exhaled during the first second of exhalation after maximal inspiration. It is used as a measure of lung function.

Gastroesophageal reflux disease (GERD): A condition in which the contents of the stomach flow back up into the esophagus. It can lead to symptoms of asthma, particularly when lying down.

Glutaraldehyde: A chemical used in an aqueous solution for sterilization of endoscopic equipment, thermometers, and plastic, rubber, or other non–heat-resistant equipment. It is also used topically in the treatment of warts and as a tissue fixative for light and electron microscopy.

High Efficiency Particulate Air (HEPA) Filter: A special filter used to remove fine particles from the air as a means to reduce exposure to airborne allergens.

Histamine: A chemical found within the body that has several functions, including contraction of the muscles in the airways leading to the lungs causing difficulty breathing.

Holding Chamber: A device used with a metered-dose inhaler to increase the amount of active drug inhaled into the lungs and to decrease the amount deposited in the mouth and throat; also known as a "spacer."

Hygiene Hypothesis: An evolving theory used to explain why asthma is more prevalent in industrialized countries than in underdeveloped ones. It proposes that too much modern-day cleanliness encourages inflammatory pathways that lead to asthma, rather than directed towards parasites and other germs.

Hyperinflated Chest: A clinical manifestation of acute asthma characterized by overexpansion of the lungs.

Immunotherapy: A general term encompassing active and passive immunization. With respect to asthma, it generally refers to the administration of gradually increasing doses of one or more known allergens as a means to lessen a person's inflammatory response to the allergen(s).

Incidence: The number of people in a defined population who develop a disease, eg., asthma, in a specific period of time.

Inflammation: A generally localized response to injury or destruction of tissues leading to a complex series of events such as tissue swelling and secretion of numerous substances, including mucus.

Inhaled Corticosteroid: A class of controller asthma medications related to cortisone that is used to decrease inflammation and that is taken using a metered-dose inhaler or dry-powder inhaler.

Mast Cell: Cells that secrete histamine and other substances that cause inflammation.

Medicaid Data: Information related to persons who receive medical aid as part of a program designed for those unable to afford regular medical service and that is financed jointly by the state and federal governments.

Medical Provider: A person whose primary interaction with a person with asthma is related to health care.

Medicare Data: Information related to older persons, ie., generally over the age of 65 years, who receive medical care that is financially supported by the federal government.

Metered Dose Inhaler (MDI): Propellant-driven mechanism used to deliver a medication via inhalation.

Methacholine Challenge: A test used to confirm the diagnosis of asthma. It involves the administration of methacholine under controlled conditions to demonstrate airway hyper-responsiveness to factors that cause bronchospasm in asthmatic, but not in normal, patients.

Mild Intermittent: A classification of asthma severity based on clinical features. Daytime symptoms occur two or fewer times per week and nighttime symptoms occur two or fewer times a month. Pulmonary function is normal. This is the mildest form of asthma.

Mild Persistent: A classification of asthma severity based on clinical features. Daytime symptoms occur three to six times per week, but pulmonary function is normal.

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Moderate Persistent: A classification of asthma severity based on clinical features. Daytime and/or nighttime symptoms occur daily and/or pulmonary function is reduced to 60% to 80 % of normal.

Morbidity: Generally refers to the consequences of a disease or its treatment.

Mucus: The slimy material of the mucous membranes that consists of various substances and cells. Often produced in excess during inflammation.

Nasal Polyps: Balloon-like swellings of the nasal mucosa, which often lead to nasal obstruction, loss of sense of smell, and sinus disease.

National Asthma Education and Prevention Program (NAEPP): An initiative established by the NHLBI for the purpose of developing and disseminating guidelines for asthma diagnosis and management.

National Health and Nutrition Examination Survey (NHANES): A survey conducted by the National Center for Health Statistics and the Centers for Disease Control and Prevention designed to collect information about the health and diet of people in the United States. It is unique in that it combines a home interview with health tests that are done in a mobile examination center.

National Heart Lung and Blood Institute (NHLBI): A part of the National Institutes of Health that provides leadership for a national program in diseases of the heart, blood vessels, lung, blood, and sleep disorders. The Institute plans, conducts, fosters, and supports an integrated and coordinated program of basic research, clinical investigations and trials, observational studies, and demonstration and education projects.

National Institute for Occupational Safety and Health (NIOSH): A part of the CDC, the National Institute for Occupational Safety and Health is the federal agency responsible for conducting research and making recommendations regarding the prevention of work-related disease and injury.

National Institutes of Health (NIH): An agency of the Department of Health and Human Services, the National Institutes of Health is the steward of medical and behavioral research for the U.S. Its mission is science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability.

Nebulizer: A device for creating and administering an aerosol spray through the mouth.

Non-medical provider: An individual whose primary interaction with a person with asthma is not focused on health.

Occupational Safety & Health Administration (OSHA): A branch of the U.S. Department of Labor whose mission is to save lives, prevent injuries, and protect the health of America's workers.

Oral Corticosteroid: A class of medications related to cortisone used for asthma to decrease inflammation and that is taken by mouth.

Ozone: A chemical derived from oxygen that is irritating and toxic to the respiratory system.

Peak Expiratory Flow Rate: The maximum velocity with which air comes out of the lungs during a rapid expiration following a maximum inspiration.

Peak Flow Meter: A hand-held instrument that measures peak expiratory flow rate and is used to monitor asthma course and treatment.

PEF Variability: The difference between the highest and lowest peak expiratory flow rates in a 24-hour period. It is used as a measure of asthma severity.

Perennial Indoor Allergens: Substances found indoors year round that can cause an allergic reaction or exacerbate asthma, such as house dust mites, mold, mildew, cockroaches.

Plicatic Acid: A substance found in Western red cedar wood dust that can trigger an asthma attack.

Prevalence: The number of people in a specified group with active disease, eg., asthma, within a defined period of time.

Prevalence Data: Information related to the prevalence of a disease.

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Pulmonary: Relating to the lungs.

Reactive Airways Dysfunction Syndrome (RADS): A term sometimes used to describe asthma that develops after a single, very high exposure to an irritant chemical.

Remission: The period during which the signs and symptoms of a disease are under control.

Rescue Medication: Medication taken to provide prompt reversal of the symptoms of acute airflow obstruction and relief of accompanying bronchoconstriction.

Rhinitis: Inflammation of the mucous membranes of the nose with symptoms of sneezing, itching, nasal discharge, and congestion. It can be allergic or non-allergic in nature.

Second-hand Smoke: Passive exposure to smoke, usually tobacco.

Sentinel Event Notification Systems for Occupational Risks (SENSOR): A network utilizing information from sentinel providers (individual practitioners, laboratories, and clinics) and other sources (death certificates, hospital discharge data, worker's compensation records) to identify work-related asthma.

Severe Persistent: A classification of asthma severity based on clinical features. Daytime symptoms are "continual," nighttime symptoms are "frequent," and pulmonary function may be less than 60% of normal. This is the most severe form of asthma.

Short-acting Bronchodilator: A drug that dilates the airways and is used to treat an acute asthma episode.

Sinuses: The spaces that are outcroppings of the nasal passages.

Socioeconomic Status (SES): A means of classification based on income and living conditions that is related to the incidence and prevalence of asthma.

Spacer: A device used with a metered-dose inhaler to increase the amount of active drug inhaled into the lungs and to decrease the amount deposited in the mouth and throat; also known as a "holding chamber."

Spirometry: The preferred method to measure airway obstruction and its degree of reversibility for the purpose of diagnosing and characterizing the severity of asthma.

State-wide Partnership: A group of organizations within a state with local, county, and state representation that work together for a common purpose.

Surveillance: The ongoing systematic collection, analysis, interpretation, and timely dissemination of health data for the purpose of monitoring trends in the disease and its management so as to improve, prevent, or better control the disease within the population.

Syndrome: A group of symptoms that occur together.

Systolic Blood Pressure: The blood pressure that occurs when the heart is beating and pumping blood out to the body.

Tachycardia: Rapid beating of the heart, usually in excess of 100 beats per minute.

Tachypnea: Rapid breathing.

Trachea: The tube that descends from the larynx and branches into the right and left main bronchi. Also called the windpipe.

Tracheobronchial Tree: The part of the respiratory system comprised of the trachea and the bronchi.

Trigger: A factor that may bring on or increase the signs and symptoms of asthma.

Urticaria: A skin disease characterized by itching, redness, and swelling. Acute urticaria lasts for a few days, while chronic urticaria lasts longer than several weeks.

Wheezing: A whistling noise with a high pitch sometimes heard in asthma, especially during an acute attack. It is due to the movement of air through narrowed airways.

Youth Risk Behavior Surveillance System (YRBSS): A branch of the CDC whose purpose is to monitor priority health risk behaviors typically developed during childhood and early adolescence that contribute markedly to the leading causes of death, disability, and social problems among youth and adults in the United States.

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